OB/GYN Emergencies

Introduction

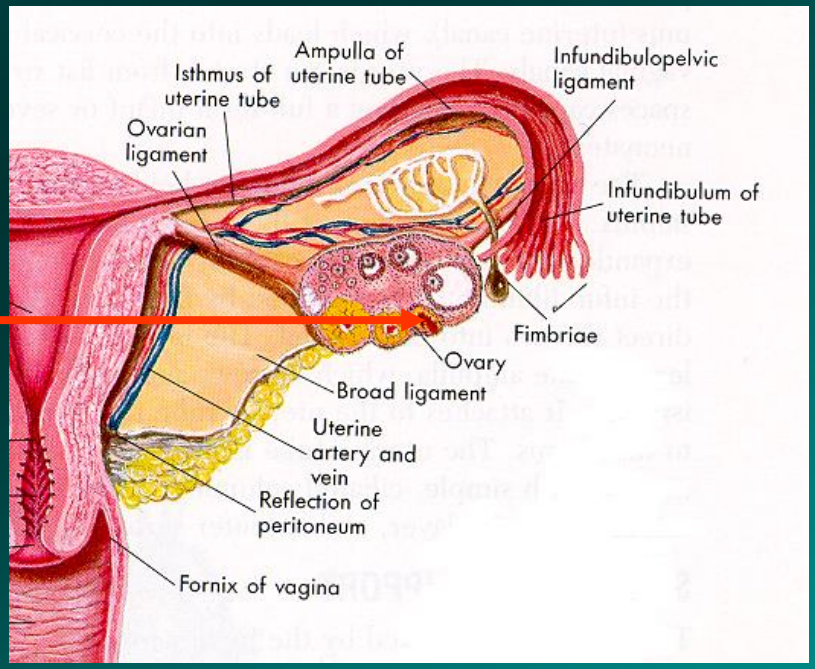
- Long before there were medical personnel, women were having babies
- For the most part they managed quite well without medical intervention
- Giving that birth is a natural process which in the majority of cases is without problems

Introduction

- EMT is there to assist the natural process
- EMT needs to know how to provide a clean, safe environment and how to deal with any complications when they arise

A & P Female Reproductive System

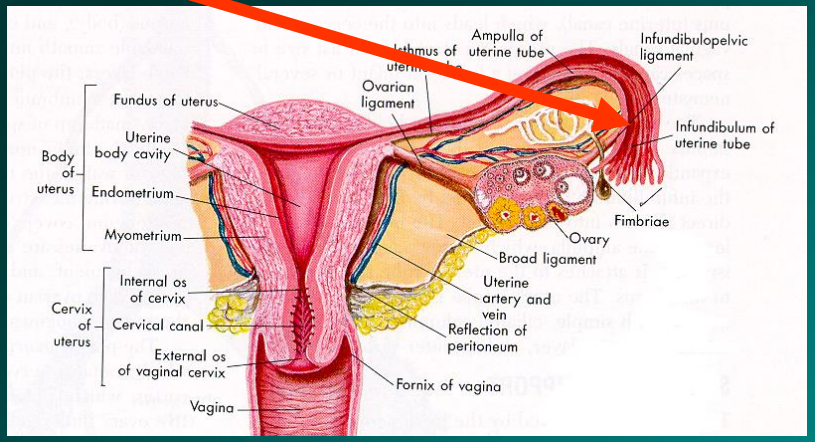
- Two walnut size organs lying in the right & left lower quadrants



- Function - produce sex hormones & store egg (ova)

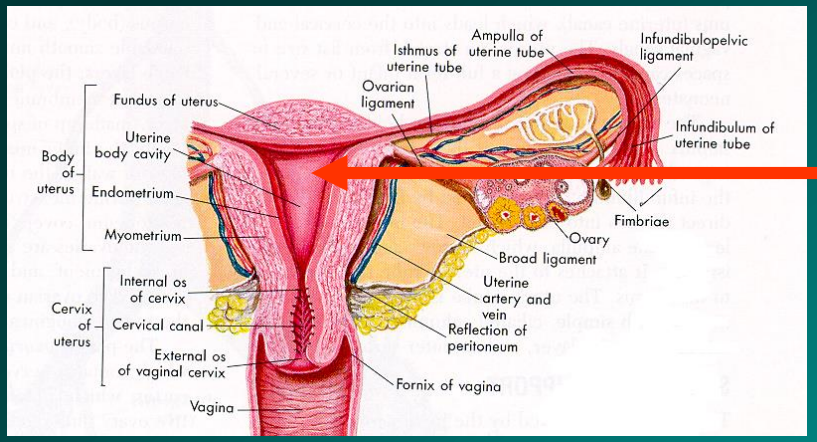
A & P Female Reproductive System

- Fallopian Tube
  - passageway from ovaries to uterus
  - fertilization of the egg occurs here



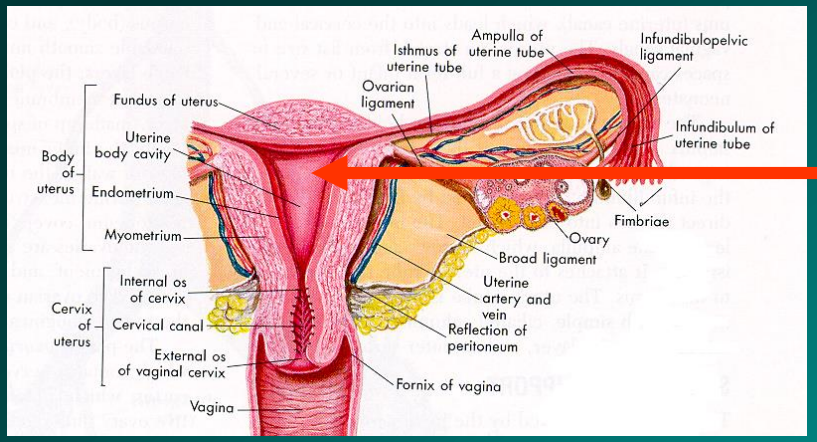
A & P Female Reproductive System

- Uterus
  - pear shaped muscular organ
  - each month stimulated by female hormones to form special inner lining, which will nourish egg if fertilized



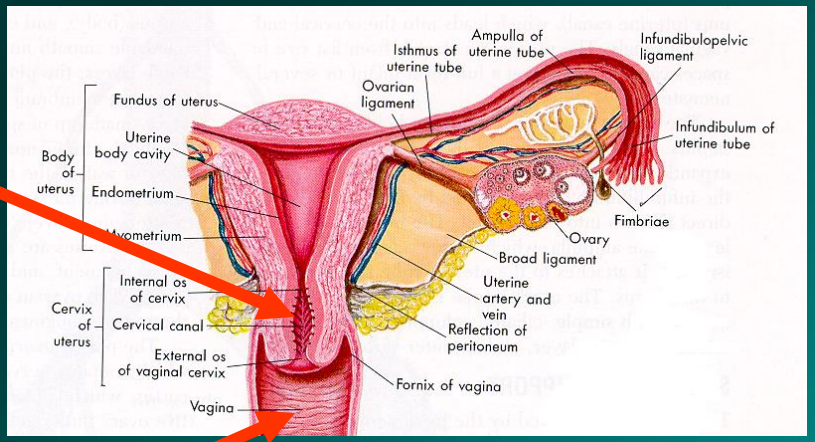
A & P Female Reproductive System

- Uterus
  - if fertilization occurs, pregnancy begins and egg implants on uterine wall
  - If egg is not fertilized, uterus sheds its special lining, composed of cells & blood



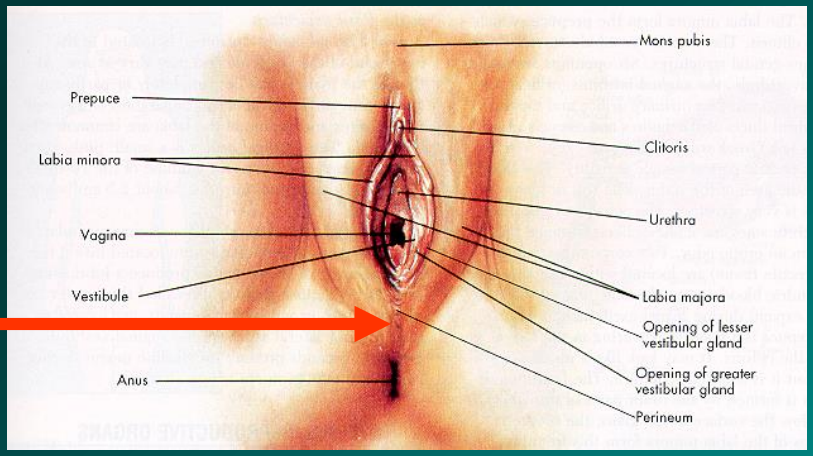
A & P Female Reproductive System

- Cervix
  - narrow opening distal end of uterus
- Vagina
  - a muscular tube which connects uterus to external genitalia



A & P Female Reproductive System

- Perineum
  - area between the vaginal opening and the anus



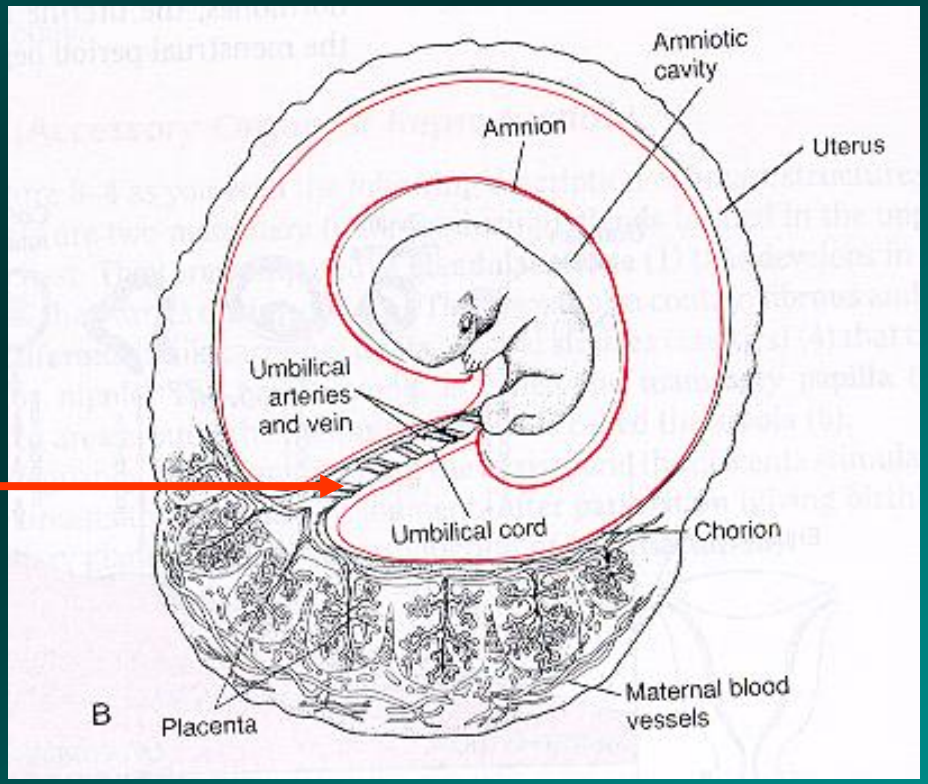
Organs of Pregnancy

Placenta

- Fleshy, disk-like organ
- Functions
  - Transport of nutrients
  - Excretion of wastes
  - Transfer of heat
  - Hormone production

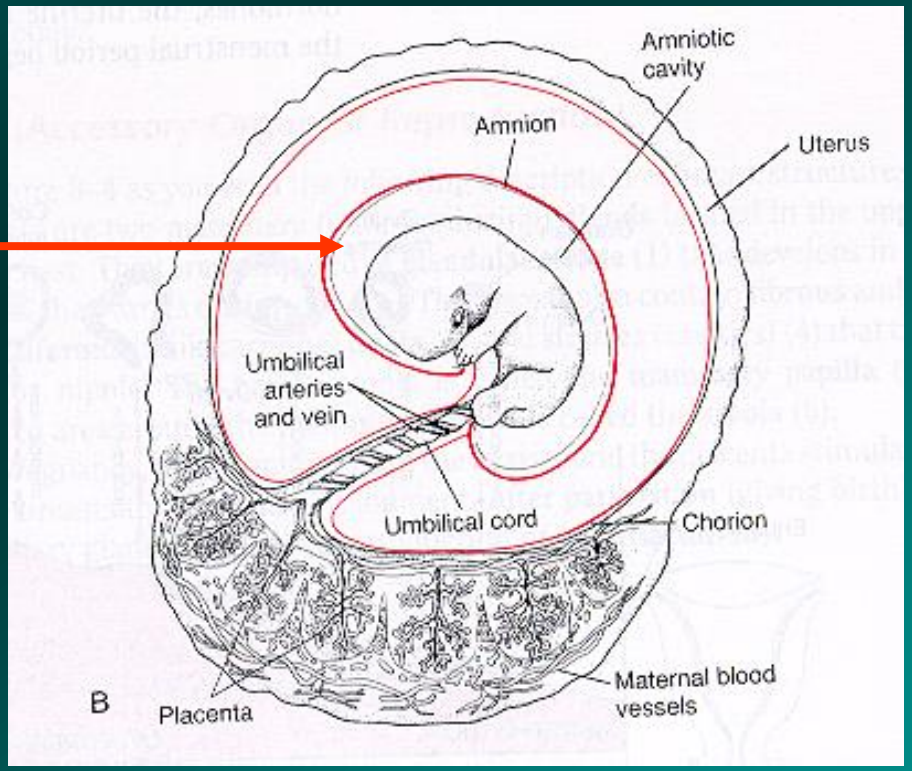
Umbilical Cord

- Cord connecting the placenta with the umbilicus of fetus
- Contains 2 arteries, 1 vein



Amniotic Sac & Fluid

- "Bag of waters"
- Approximately 1,000 cc of fluid at term (protects the fetus)



Terms of Pregnancy

Antepartum

- Before delivery

Postpartum

- Referring to the maternal period following childbirth

Prenatal

- Existing or occurring before birth

Natal

- Connected with birth

Primigravida

- A woman who is pregnant for the first time

Primipara

- A woman who has given birth to her first child

Multigravida

- A woman who has been pregnant several, or many times

Multipara

- A woman who has borne several or many children
  - does not matter whether baby was alive or stillborn

Gravida

- The number of pregnancies the individual has had

Parity

- The number of pregnancies that have produced an infant of viable age

Hemodynamic Changes

Cardiac Output

- Increased after the tenth week of pregnancy by 1.0 to 1.5 liters per minute
- Increased output greatly influenced by the maternal position as term nears
- Vena Cava compression in the supine position may decrease cardiac output by 30 to 40%

Heart Rate

- Increases throughout pregnancy
- Third trimester - it reaches a rate of 10 to 15 beats per minute more than in nonpregnant state

Blood Pressure

- Second trimester - 5 to 15 mmHg fall in systolic and diastolic pressure
- Returns to near-normal levels at term

Blood Volume and Composition

- At 34 weeks gestation, plasma volume reaches a level of 40 to 50% more than pre-pregnancy
- A small increase in RBC volume occurs, resulting in a decreased hematocrit (physiologic anemia of pregnancy)

Blood Volume and Composition

- With hemorrhage, otherwise healthy pregnant women may lose 30 to 35% of their blood volume before exhibiting symptoms

Respiratory

- Rate not altered
- Tidal volume increases by 40% and the residual volume falls

Gastrointestinal

- Prolonged gastric emptying
- Gastroesophageal reflux

Musculoskeletal

- Widened symphysis pubis
- Sacral iliac joints relaxes

Full Term Pregnancy

- 36 - 40 weeks
- Divided into three trimesters

First Trimester

- The uterus is a thick-walled structure of limited size, confined within the safety of the bony pelvis

Second Trimester

- The uterus leaves its protected intrapelvic location, but the small fetus remains mobile and cushioned by a relatively generous amount of amniotic fluid

Third Trimester

- Uterus is large and thin-walled
- The head is usually fixed in the pelvis with the remainder of the fetus exposed above the pelvic brim
- The placenta reaches its maximum size by 36 to 38 weeks

Predelivery Emergencies

- Scene size up
  - dispatch may indicate potential obstetrical emergency
  - any women of childbearing years (12 - 50) could present with obstetrical emergency

Predelivery Emergencies

- Initial Assessment
  - ensure BSI
  - assess mental status
  - ensure ABC's
  - use same assessment techniques as for a non-pregnant patient

Predelivery Emergencies

- Focused history & physical exam
  - SAMPLE
  - Obstetric assessment

Obstetric History

- Length of gestation
- Estimated date of confinement (EDC)
- Para and gravida
- Previous cesarean sections
- Prenatal care ?
- History of gynecologic or obstetric complications

Obstetric History

- Presence of pain
  - OPQRST
- Presence, quantity and character of any vaginal bleeding
- Presence of other discharge
- Current general health

Obstetric History

- Sonogram results
- ? multiple births
- Allergies and/or medications
- Maternal urge to push
- Rupture of membranes
- Need to move bowels

Physical exam

- Recognition of pregnancy - early signs and symptoms
  - breast tenderness
  - urinary frequency
  - missed period
  - nausea, vomiting

Physical exam

- Presence of fetal movements (at least 20 weeks)
- Presence of fetal heart sounds (normal 140-160 beats per minute) - FHT can be heard at approximately 18 - 20 weeks

Physical exam

- Exam for the presence of a prolapsed cord
- If indicated, examine for crowning, vaginal bleeding
- NEVER perform an internal vaginal exam

Predelivery Emergencies - Management

- **Be aware of supine hypotension syndrome**
- Ensure adequate ABC's
- Provide high flow O2
- Treat for shock
- Place sanitary pads over vagina if bleeding present

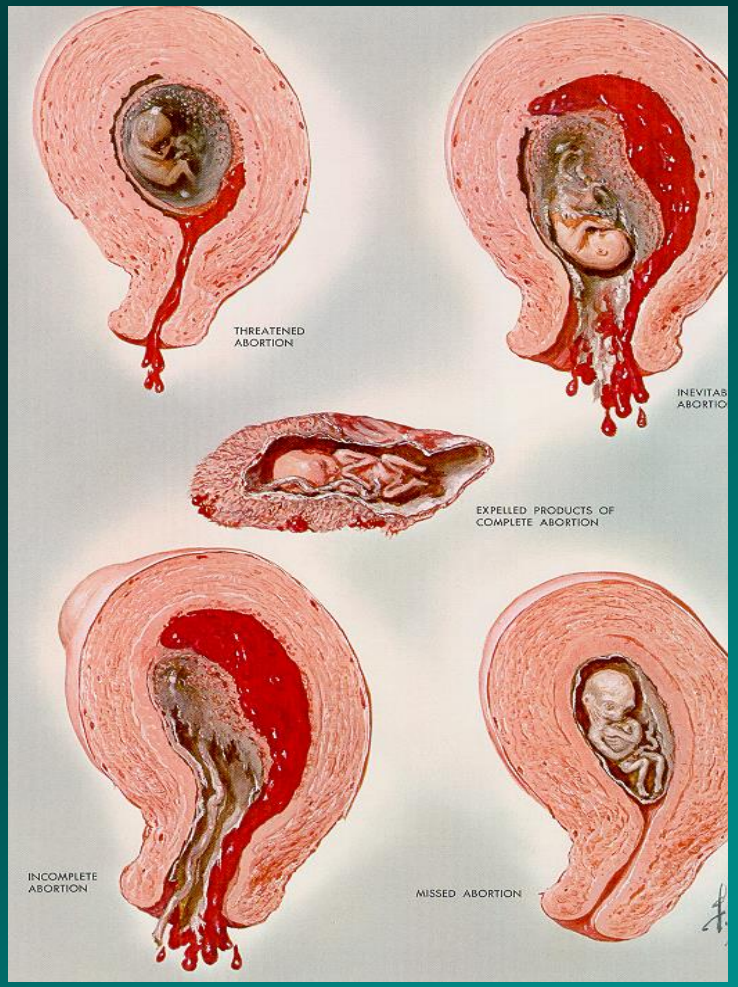
Predelivery Emergencies - Management

- Do not internally pack vagina
- Save any passed tissue
- Provide same care as for a non-pregnant patient based on other s & s
- Transport patient on left side

Complications of Pregnancy

Abortion - ”Miscarriage"

- Loss of pregnancy before 20th week gestation



Abortion - ”Miscarriage"

- Signs\symptoms
  - spotting, bleeding, or massive hemorrhage with shock
  - uterine cramping, low back pain, or pelvic pressure
  - expulsion of amniotic fluid and/or products of conception

Abortion - ”Miscarriage"

- Signs\symptoms
  - lack of progressive uterine enlargement and regression of mammary changes
  - malaise, anorexia, and headache

Abortion - ”Miscarriage"

- Classifications
  - spontaneous - common miscarriage - most occur before 12 th week
  - threatened - uterine bleeding and cramping - symptoms may subside or progress

Abortion - ”Miscarriage"

- Classifications
  - imminent or inevitable - increase bleeding or cramping with effacement and dilation of cervix
  - incomplete - only part of products of conception passed; bleeding may be heavy; increased infection

Abortion - ”Miscarriage"

- Classifications
  - complete - all products passed
  - missed - death of fetus but products did not pass

Abortion - ”Miscarriage"

- Classifications
  - criminal - attempt to destroy fetus by non-licensed person
  - therapeutic - pregnancy poses a threat to the mother's health

Abortion - ”Miscarriage"

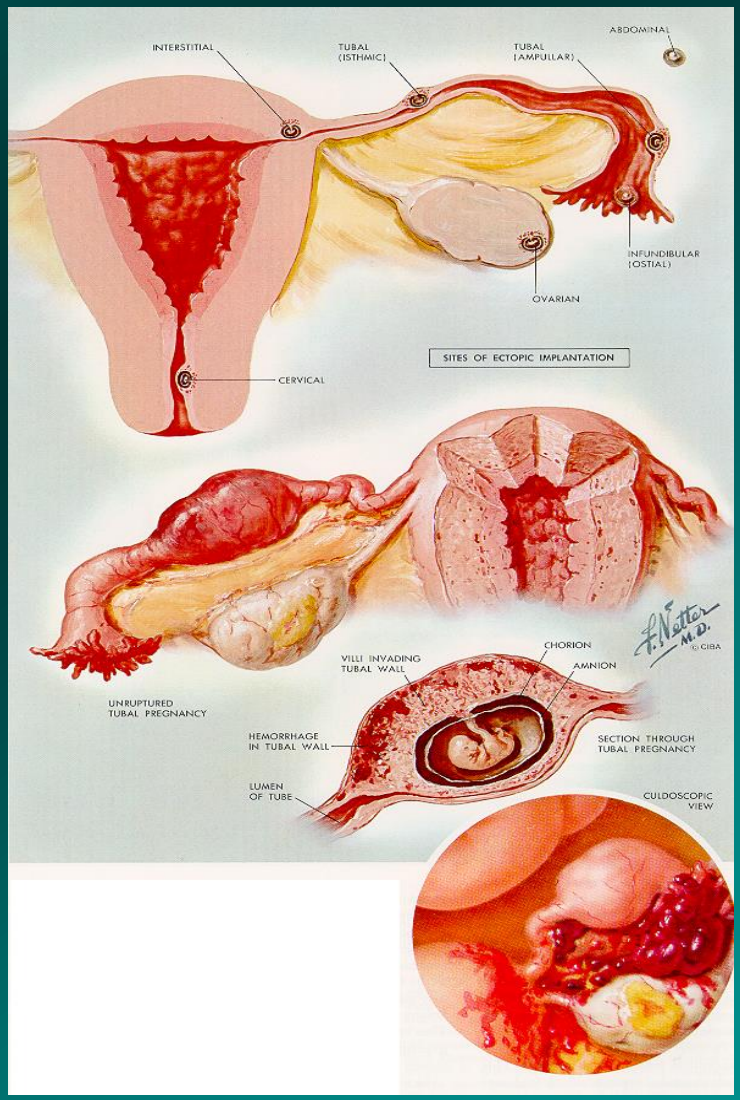
- Treatment
  - reassurance
  - collect & transport any products of conception
  - pad count

Abortion - ”Miscarriage"

- Treatment
  - cut umbilical cord if still attached to expelled fetus
  - baptize the fetus if requested by parents
  - transport

Ectopic Pregnancy

- Predisposing factors - conditions which scar the fallopian tube, obstructing transport
  - Previous pelvis infections
  - Pelvic adhesions from prior surgery
  - Tubal ligations
  - Presence of IUD



Ectopic Pregnancy

- Signs\symptoms
  - extremely variable - depends on the site of implantation and whether rupture has occurred
  - usually ruptures 6-12 weeks
  - last normal menstrual period more then 6 weeks

Ectopic Pregnancy

- Signs\symptoms
  - pain - variable - may be cramping, sharp, intermittent, unilateral or generalized
  - may have subdiaphragmatic or shoulder pain due to irritation of the diaphragm

Ectopic Pregnancy

- Signs\symptoms
  - nausea and vomiting
  - increase abd girth
  - rapid onset of hypovolemic shock
  - positive tilt test

Ectopic Pregnancy

- Management
  - Treat for shock
  - High flow O2
  - Rapid transport

Hypertensive Disorders of Pregnancy

- Hypertension - rise in both diastolic & systolic of 15 mmHg or more
  - Usually first pregnancy or if underlying medical problems
  - Poor diets low in protein

Hypertensive Disorders of Pregnancy

- Pre-eclampsia (toxemia of pregnancy)
  - development of hypertension, primarily in primigravidas, usually after the 20th to 24th week of pregnancy

Hypertensive Disorders of Pregnancy

- Signs/symptoms
  - B/P greater 140/90 (severe - 160/100)
  - edema
  - headache - esp frontal
  - visual disturbances

Hypertensive Disorders of Pregnancy

- Signs/symptoms
  - nausea/vomiting
  - irritability
  - epigastric or upper right quadrant pain
  - resp distress suggesting pulmonary edema

Hypertensive Disorders of Pregnancy

- Treatment
  - Oxygen
  - Reassurance
  - Decrease stimuli

Supine Hypotension Syndrome

- When woman lies on back the weight of the uterus compresses the inferior vena cava against the spine
- In late pregnancy, pressure can cause a significant decrease in the amount of blood returning to the heart thereby increasing cardiac output

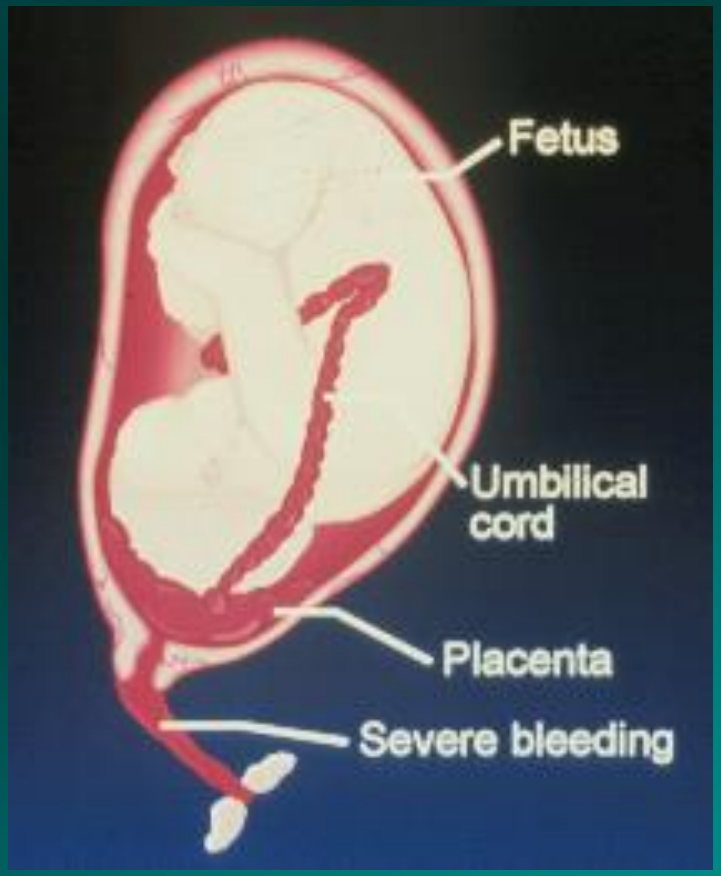
Supine Hypotension Syndrome

- Signs/symptoms
  - hypotension
  - anxiety
  - faintness
- Treatment - turn of left side

Third Trimester Hemorrhage

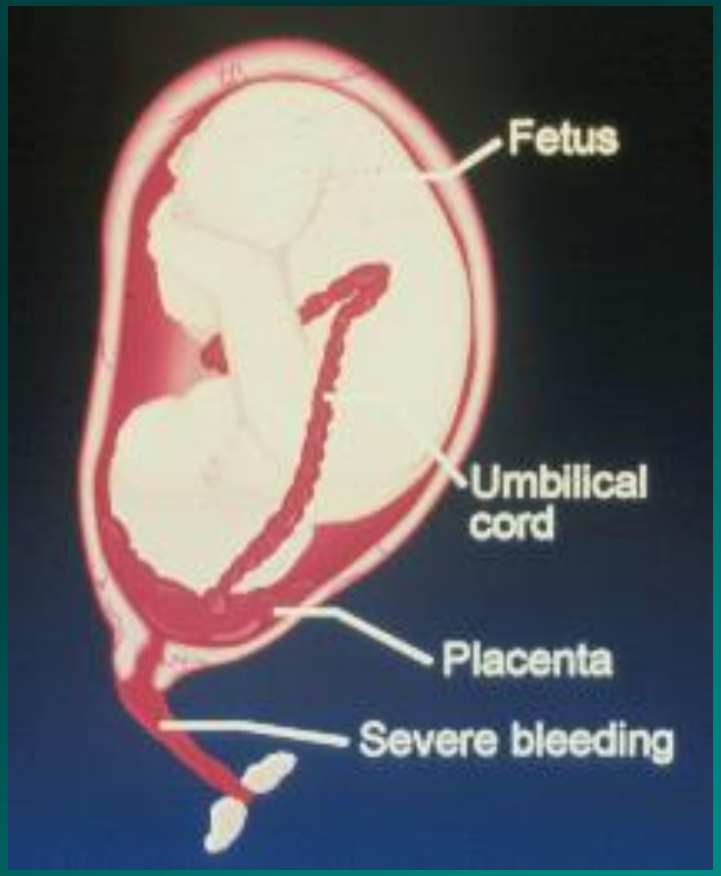
Placenta Previa

- Implanted lower 5th uterus
- After 5th month cervix begins to dilate and slowly the placenta begins to slough off



Placenta Previa

- After 8th and 9th month - extensive dilation may cause extensive bleeding
- Both in danger



Placenta Previa

- Signs/symptoms
  - Causeless vaginal hemorrhage with mother usually in at least the 8th month
  - Painless
  - Shock

Abruptio Placenta

- Causes - several including trauma and toxemia

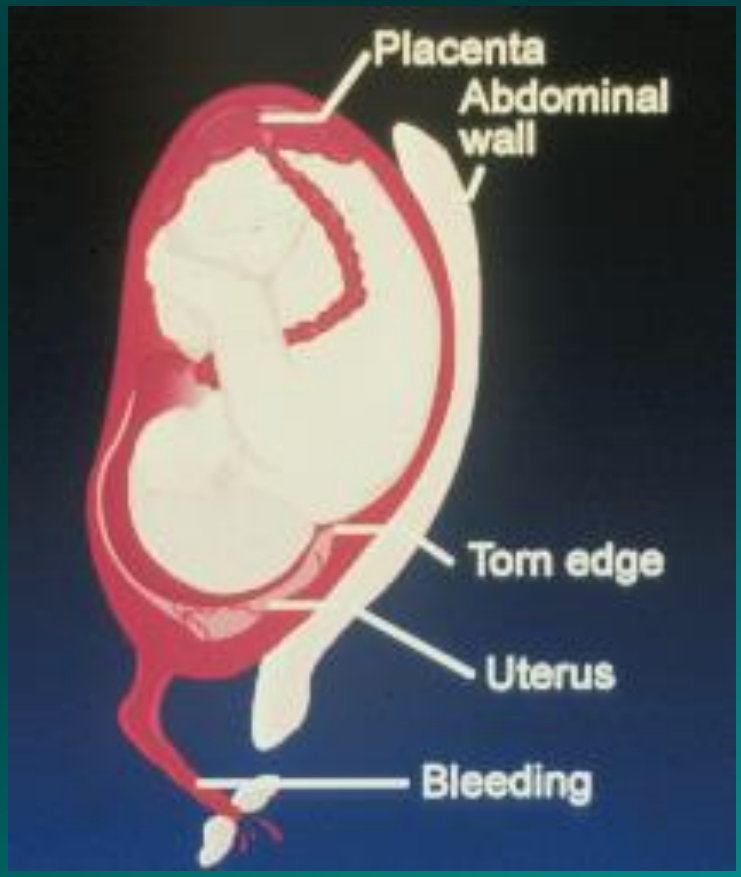
- Placenta separates from uterine wall causing decreased blood flow to fetus and possible hypovolemic shock mother

Abruptio Placenta

- Signs/symptoms
  - Possible vag. bleeding
  - Severe, localized abd. pain
  - Abdominal rigidity
  - Shock

Uterine Rupture

- Causes
  - Previous uterine surgery
  - Multiple births
  - Prolonged labor
  - Trauma



Uterine Rupture

- Signs/symptoms
  - Usually occurs after onset labor
  - Pain
  - Labor pains cease immediately
  - May have vag bleeding
  - Easily palpated fetus parts
  - Rapid onset of shock

Labor

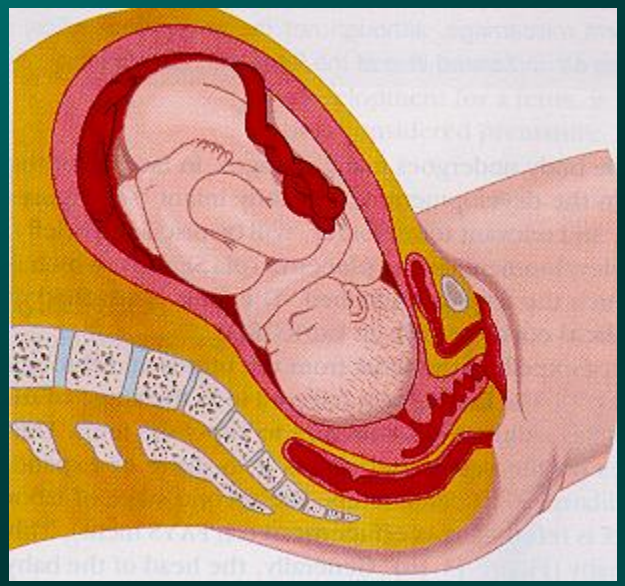
- Definition - term used to describe the process of childbirth

Stages of Labor

- First stage - Onset of contraction until full dilation of cervix (dilation)
- Second stage - From full dilation of cervix to delivery baby (expulsion)
- Third stage - From delivery of baby to delivery of placenta (placental)

First Stage - Latent

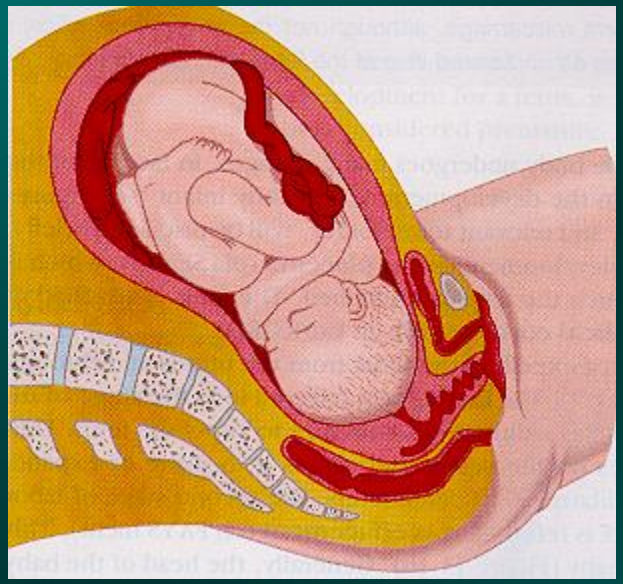
- 5 - 10 hrs
- 2 - 4 cm dilated



- Mild, rhythmic contractions lasting 30 - 50 sec with 5 - 20 min. between
- Scant, brownish discharge
- May be happy, excited, relieved, & apprehensive

First Stage - Active

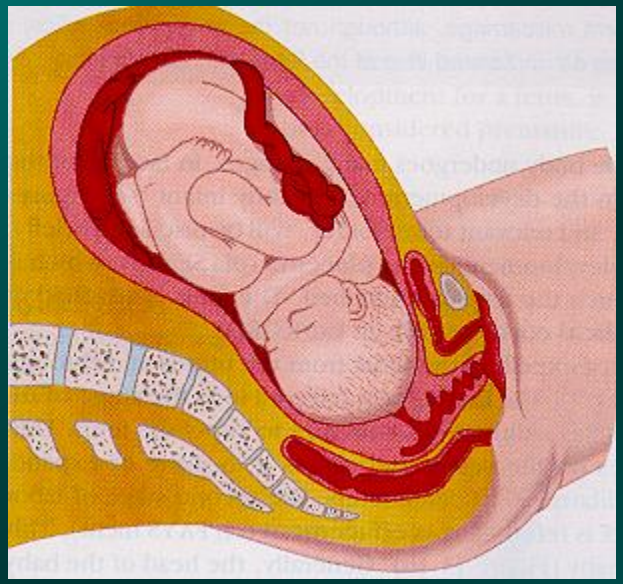
- 2 - 4 hrs
- 6 - 8 cm dilated



- Moderate intensity, rhythmic contractions lasting 45 - 60 sec every 3 - 5 min
- Scant moderate, pink to bloody mucus
- Irritable, impatient, aggravated, fearful, egocentric, and possibly panicky, doubtful, of self-control of pain

First Stage - Transitional

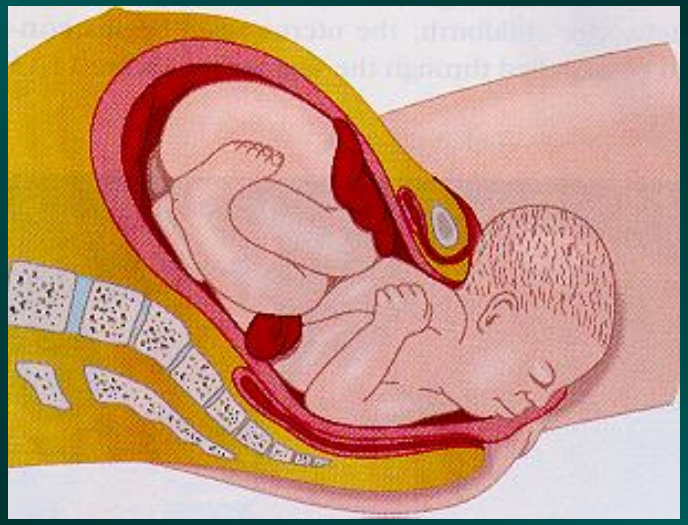
- 10 - 15 min to 1 hr
- 8 - 10 cm



- Intense, rhythmic contractions lasting 60 - 90 sec every 1 - 3 min
- Very uncomfortable, most difficult time during labor; intense low back pain, nausea, abd tenderness, leg tremors; diaphoretic; circumoral pallor; urge to defecate
- Heavier, bloody mucus
- Restless, dozing between contractions, trembling, agitated

Second Stage

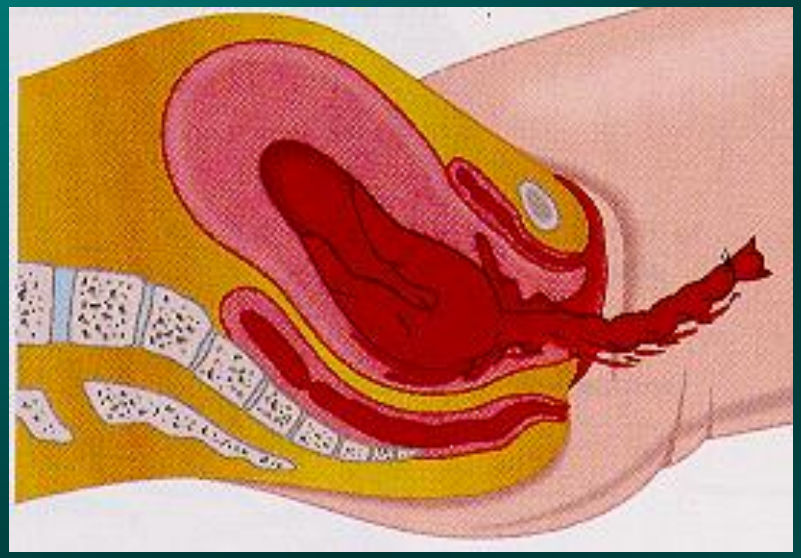
- Intense and powerful contractions lasting 50-70 sec every 2-3 min.
- Duration 20 min - 1 hr



- Urge to push
- leg cramps
- Burning or splitting sensation of perineum
- Fullness of vagina
- Cocygeal discomfort
- Alarm & attention focused on the baby

Third Stage

- Duration 5 - 10 min



- Several strong contractions occur 5 - 7 min after the birth of the infant
- Gush of dark, bloody discharge
- Average blood loss 200 - 250 ml

Onset of Labor

- Labor pains
  - True labor
    - Usually begin as an aching sensation in the small of the back
    - Within a short time, become cramp-like pains in the lower abd
    - Recur at regular intervals that shorten intensity gradually increases
    - Intensify with walking

Onset of Labor

- Labor pains
  - False labor - Braxton-Hicks contractions
    - Occur as early as 3-4 weeks (part of natural stretching process)
    - Contractions irregular; intervals remain long and intensity unchanged
    - Located in abd
    - No affect or relief with walking

Onset of Labor

- Rupture of membranes
- Bloody show
- Lower abdominal pressure

Process Relating to Labor & Delivery

Labor

- Don’t pull baby out
- Protect the baby
- Most childbirth's are normal & uncomplicated
- Most occur in hospital
- Mother delivers the baby;EMT only helps

Transport Decisions

- Number of pregnancies - shortened labor with multiple pregnancies (multiparity)
- Frequency and quality of contractions
- Urge to push
- Crowning

Transport Decisions

- Also related to presence of complications
  - Prolonged rupture of membranes
  - Meconium
  - Abnormal presentations
  - Fetal bradycardia
  - Gross bleeding
  - Elevated BP/ evidence of pre-eclampsia

Normal Delivery

Position

- Usually flat on back, knees flexed, thighs spread apart - feet flat on surface
- Buttocks at least 2 feet from the end of bed or table
- Folded blanket or sheet beneath buttocks to elevate 1-2" above surface

Preparation

- Place delivery pack within easy reach
- Always have someone at patient's head
  - Reassurance
  - In case of vomiting
    - portable suction
    - emesis basin
- Create sterile field

Normal Delivery

- Observe for head- Support head with hands - very slight pressure
  - Avoid fontanelles
  - Do not pull baby out
  - Prevent head from rocketing out (prevents excessive tearing)

Intact Amniotic Sac

- May break spontaneously during delivery
- If delivered intact, immediately break membrane and suction nose and mouth

Normal Delivery

- If cord is wrapped around neck, loosen it or clamp and cut

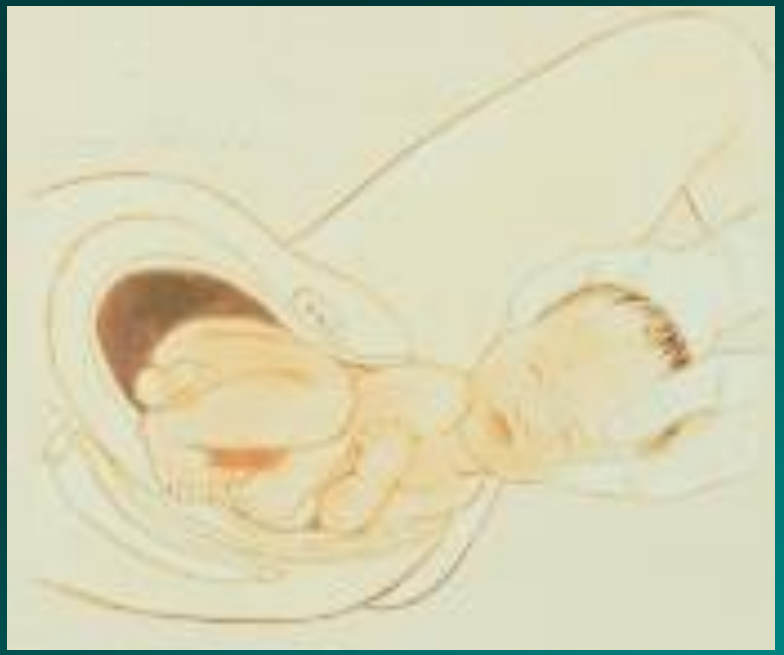
Normal Delivery

- Suction nose and mouth
- Remember

  Infant is a nose breather

Normal Delivery

- Deliver upper shoulder, abdomen & hips



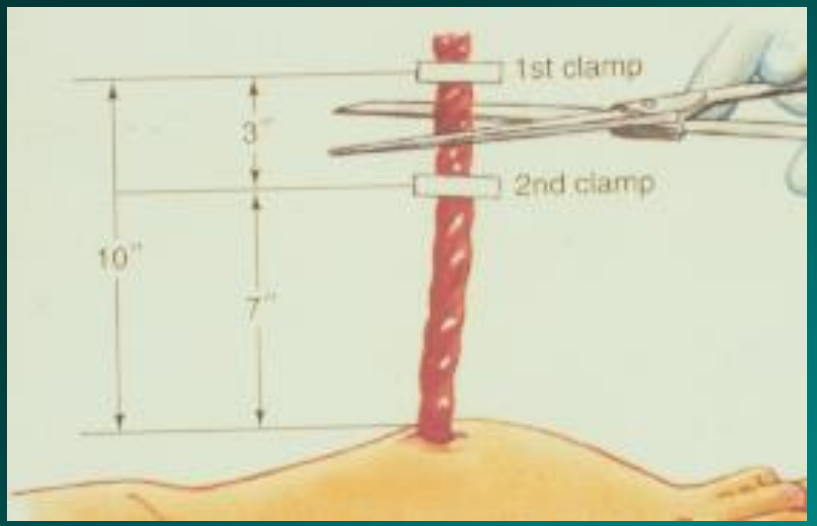
Normal Delivery

- Hold the baby at the level of the vagina to prevent over or under transfusion of blood

- Do not "milk"

Normal Delivery

- Suction, dry, warm, position, stimulate
- Clamp and cut the cord
  - # 1 - 10 cm
  - # 2 - 5 cm over the first
- Record the time of delivery



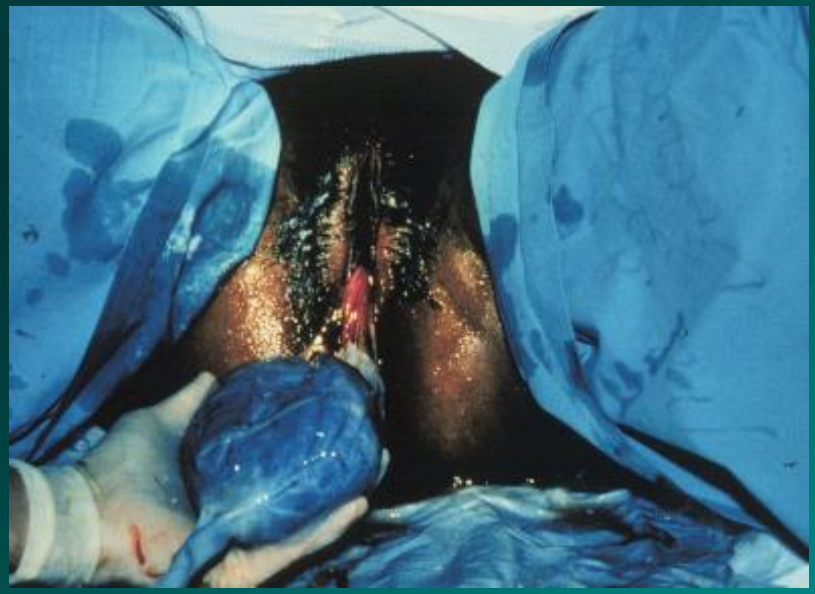
33-28

Normal Delivery

- Prepare for transport while watching for delivery of the placenta
- After placental delivery massage fundus until becomes hard
- Monitor vital signs throughout

Placental Delivery

- Signs of delivery
  - large gush of blood from the vagina
  - lengthening of the umbilical cord
  - fundus rises upward in abd
  - uterus firming & becoming more globular



Placental Delivery

- Usually delivers within 20 min
- Wrap placenta and bring to hospital
- Gently massage abd in circular fashion
- Let mother nurse baby

Normal Delivery

- Perform APGAR at 1 & 5 Minutes
  - A - appearance
  - P- pulse
  - G - grimace
  - A- activity
  - R- respirations

APGAR SCALE	1 min.	5 min.
Cardiac Rate (>100 = 2, < 100 = 1, 0 = 0)	2	2
Respiratory Rate (Rapid = 2, Slow = 1, Absent = 0)	2	2
Muscle Tone (Good = 2, Fair = 1, Absent = 0)	1	2
Reflex Irritability (Strong = 2, Weak = 1, Absent = 0)	2	2
Color (All pink = 2, Some pink = 1, No pink = 0)	1	2
TOTAL	8	10

After delivery Procedures

- Vaginal bleeding
  - a loss of 500cc is well tolerated
  - if blood loss excessive, massage the uterus
  - apply O2
  - treat for shock

Abnormal Deliveries & Complications

Prolapsed Cord

- Place the mother in a deep head-and-torso-down or knee-chest position

- Gently check pulsation of cord, if not present must place gloved hand in vagina and push head off cord

Prolapsed Cord

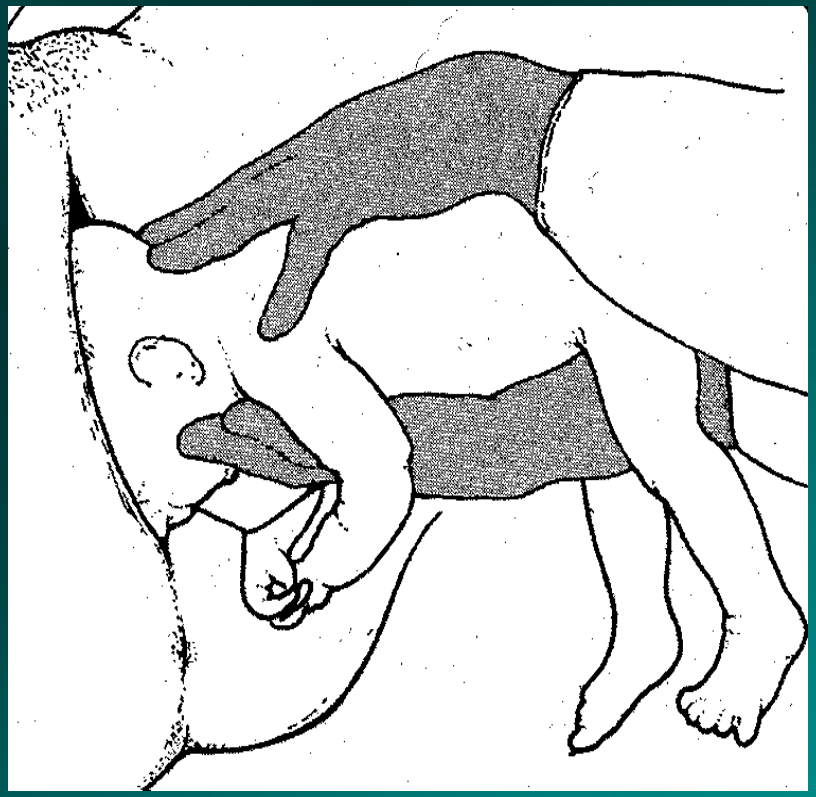
- Cover cord with sterile saline soaked sponge
- Transport promptly for hospital delivery

Breech Delivery

- Presenting part is the buttocks or feet
- Three percent of all deliveries
- More common in premature infants and mothers with uterine abnormalities
- Increased risk for fetal trauma, anoxia, prolapsed cord if possible quickly transport

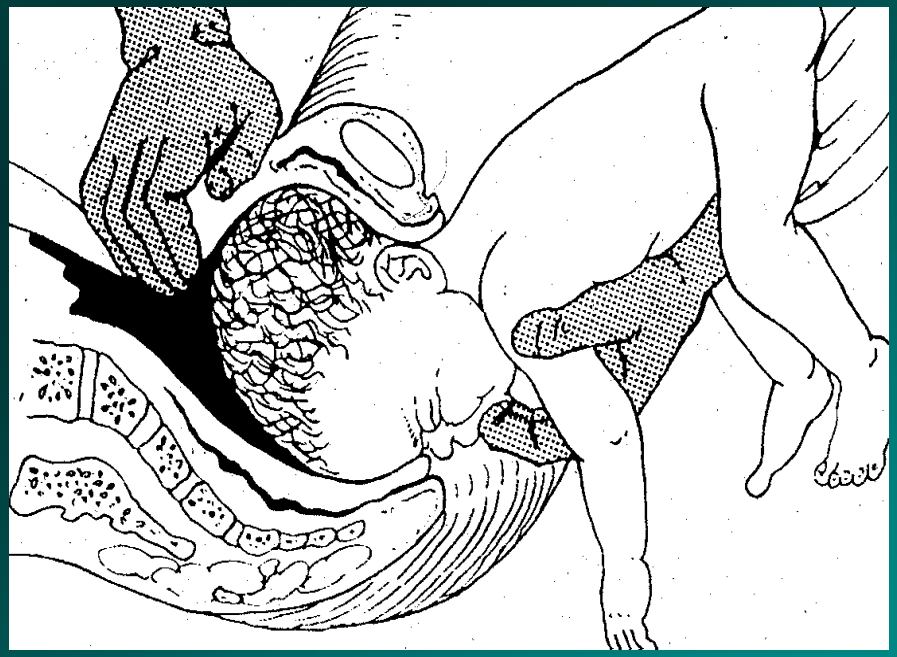
Breech Delivery

- Position mother with legs flexed at the edge of firm bed
- Support infant as it delivers
- If buttocks are protruding but successive attempts to push are not successful, a foot may have become lodged against the bone of the mother's pelvis



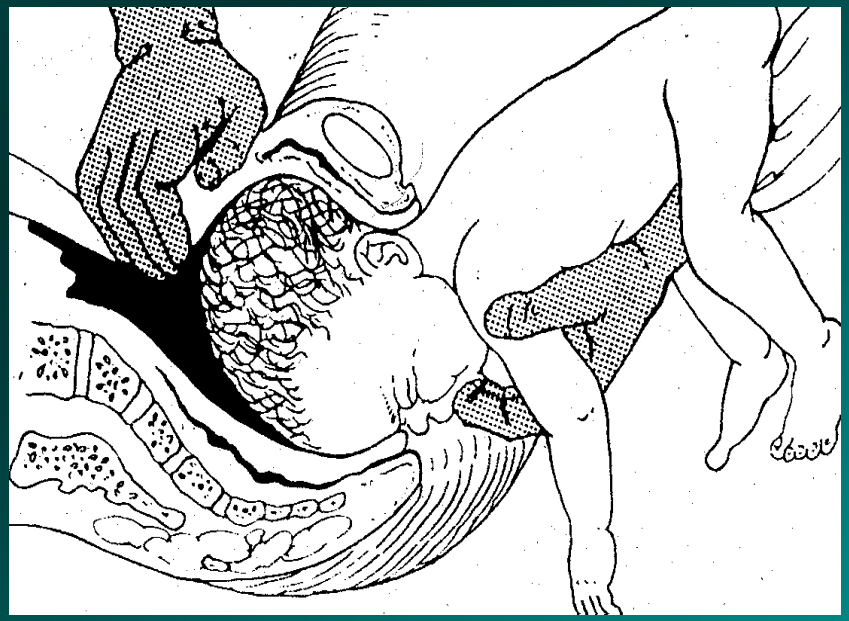
Breech Delivery

- If head fails to deliver
  - Flex the mother's legs and knees as far as possible while another responder presses above the pubic symphysis
  - Do not hyperextend the infant's head and avoid putting excessive traction on the infant's torso



Breech Delivery

- If head fails to deliver
  - Head compresses umbilical cord
  - Infant trying to breath
  - If head fails to delivery - Maintain airway with fingers and transport
  - DO NOT TRY TO PULL BABY OUT



Limb Presentation

- Arm or leg protruding from vagina
- Do not replace; apply sterile dressing
- Transport promptly for hospital delivery

Multiple Births

- Suspect when:
  - one small baby & mother's abd is still large
  - contractions begin after one baby delivers
  - infant size small compared to abd

Multiple Births

- Management:
  - labor will start up again in 5 - 10 min with delivery in approx 30 - 45 min
  - usually both babies born before first placenta delivers
  - clamp & cut cord of first baby

Multiple Births

- Management:
  - await either placenta or second baby
  - record time of birth and be sure to label each infant
  - await placental delivery

Premature Birth

- Characteristics
  - weight less than 5 1/2 lbs
  - skinnier
  - smaller
  - redder
  - usually more wrinkled
  - head seem way to big for body

Premature Birth

- Problems
  - less fat for insulation
  - cannot tolerate blood loss
  - immature immune system
  - immature lungs

Premature Birth

- Management
  - keep warm
  - keep airway clear
  - make sure cord doesn’t bleed
  - give O2
  - prevent infection

Meconium

- Fetal bowel movement in amniotic fluid
- Indicates fetal distress
- Aspiration of meconium can cause sever respiratory distress
- **Do not stimulate infant until all meconium suctioned from airway**
- Green or brown amniotic fluid indicates presence of fecal matter

Meconium

- Management
  - **Do not stimulate before suctioning**
  - suction
  - maintain airway
  - ventilate if necessary
  - call for ALS
  - transport ASAP

Distressed Newborn

- Most newborns require temperature maintenance/mild stimulation/suctioning
- Those requiring more resuscitation need O2/BVM ventilation
- Minority of newborns need chest compressions/ALS medications

Distressed Newborn

- S & S of distressed newborn
  - respirations > 60 bpm
  - diminished breath sounds
  - pulse > 180 bpm
  - pulse < 100 bpm
  - obvious trauma from birthing

Distressed Newborn

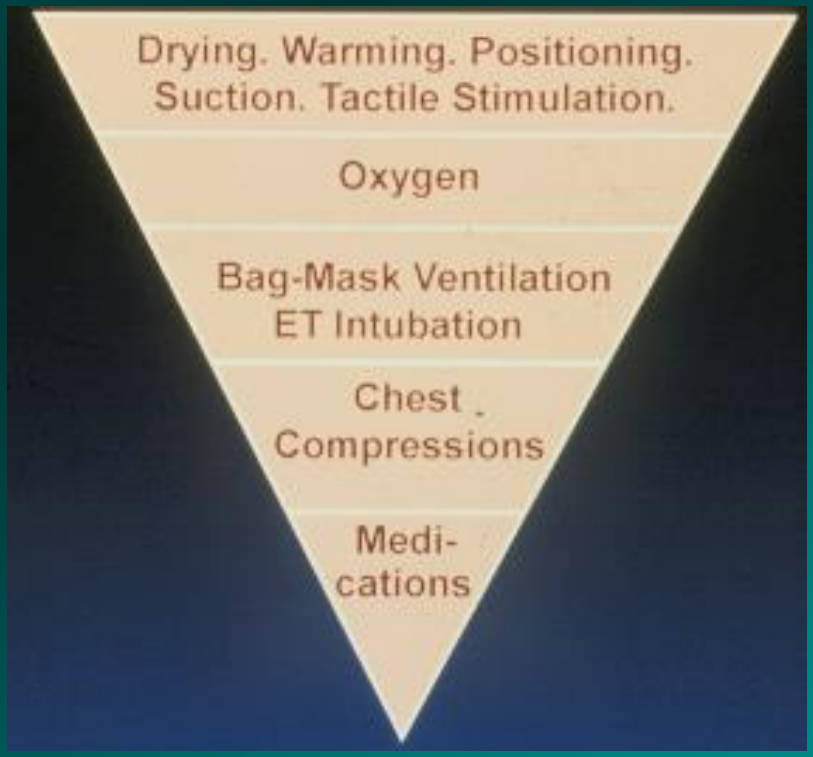
- S & S of distressed newborn
  - poor/absent muscle tone
  - respiratory distress/arrest
  - meconium staining
  - weak pulses
  - cyanosis

Distressed Newborn

- S & S of distressed newborn
  - APGAR < 4
  - poor peripheral perfusion
  - poor responses to stimulation

Distressed Newborn

- Neonatal resuscitation
  - drying, warming, positioning, suction, tactile stimulation
  - O2
  - BVM ventilation
  - chest compressions



Distressed Newborn-Management

- Drying, warming, positioning, suction, stimulation
- Repeat suctioning
- Cover the head

Distressed Newborn-Management

- If breathing adequate, but cyanosis present:
  - provide blow-by O2
  - ensure neonate kept warm

Distressed Newborn-Management

- If breathing effort is shallow, slow or absent
  - ventilate at 40 - 60 bpm
  - reassess after 30 sec
  - continue as necessary

Distressed Newborn-Management

- Heart rate < 100 bpm
  - ventilate at 40 - 60 bpm
  - reassess after 30 sec
  - if no improvement, continue ventilation

Distressed Newborn-Management

- Heart rate between 60 - 80 bpm and not responding to ventilation
  - start chest compressions

Distressed Newborn-Management

- **IF AT ANY TIME THE HEART RATE IS < 60 BPM BEGIN VENTILATION AND CHEST COMPRESSIONS IMMEDIATELY**

Maternal Hemorrhage

- Assessment
  - More than 5 soaked pads in first 30 minutes after delivery of placenta
  - Greater then 500 ml blood loss
  - Signs/symptoms of hypovolemia

Maternal Hemorrhage

- Management
  - Control external bleeding with direct pressure
  - Massage uterus gently
  - Instruct the mother to massage her nipples to stimulate discharge of the hormone oxytocin (Pitocin)
  - Treat for shock
  - All blood soaked garments or pads should be taken to the hospital

Pulmonary Embolism

- Leakage of amniotic fluid from the uterus into mother's circulation or blood clot from pelvic or lower leg vessels
- Amniotic fluid embolism usually occurs as placenta separates from uterine wall
- Embolism from blood clots can occur at any time during pregnancy, delivery, or post-partum

Pulmonary Embolism

- Signs\symptoms
  - Sudden dyspnea
  - Pleuritic chest pain
  - Tachycardia
  - Hypotension

Pulmonary Embolism

- Management
  - High flow oxygen
  - Elevated head
  - Rapid transport
  - Be prepared to assist ventilations

Fetal Demise

- May deliver baby that has died in the womb
- Will be true test of of your medical, emotional and social abilities
- Also called Stillborn

Fetal Demise

- If an intrauterine infection caused the demise, may have extremely foul odor
- Delivered infant will have skin blisters, skin sloughing, & dark discoloration depending on stage of decomposition

Fetal Demise

- Head will be soft & perhaps grossly deformed
- Do not attempt to resuscitate an obviously dead infant